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NETWORK-CENTRIC COMMANDER'S INTENT:
THE KEY TO NETWORK-CENTRIC WARFARE COMMAND AND CONTROL

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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16 May 2003

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Abstract

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There are many views about how the still-developing concept of Network-Centric Warfare will transform our U.S. military. Operational commanders, leading military forces at the operational level of war, will remain relevant and essential to the effective conduct of Network-Centric Warfare. The key question is how an operational commander can effectively command his dispersed and decentralized forces while taking advantage of the capabilities offered by Network-Centric Warfare. A formal statement of clear, concise Commander's Intent is currently the primary means by which operational commanders guide the effective warfighting of their subordinate commands. A revised and improved style of Commander's Intent that capitalizes on new capabilities will be essential to effective Network-Centric Warfare.

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"The unrelenting progress of mankind causes continual change in the weapons; and with that must come a continual change in the manner of fighting."

--RADM Alfred Thayer Mahan, *The Influence of Sea Power Upon History*, 1890

Introduction

The world as we know it is changing at an ever-quicken pace. In 1971, in his book titled "Future Shock", Alvin Toffler predicted that the rate of change in our society had been, and would continue to increase exponentially, and that many individuals, organizations and institutions would not be able to adapt.¹ His forecast has proven true, most recently demonstrated with the explosion of the Internet, the socio-economic ramifications, and the implosion of the dot com market.

Two retailing businesses that adapted well and survived the dot com crash are Amazon and Wal-Mart. Amazon is a true dot com business, with no physical stores, conducting all business transactions through its web sites. Wal-Mart, the largest retailer in the world, is a long-standing brick-and-mortar business that adapted to the changing marketplace, adding a virtual online storefront. Both businesses are very successful, models of efficiency, capitalizing on the latest Information-Age technology and business practices to maximize profits and market share.

The U.S. military is striving to adapt to the changing world, as well, seeking to transform from a cold-war behemoth to a more versatile, agile force, employing the latest technology to fight wars and keep peace. "We are in the midst of a revolution in military affairs (RMA) unlike any seen since the Napoleonic Age."² One of the key RMA developments is the concept of Network-Centric Warfare (NCW), leveraging computer and communication networks to pervasively link dispersed military forces, providing nearly instantaneous

command and control (C2), along with a shared awareness of the battlespace, allowing our military forces to more effectively and efficiently fight and win wars.

Retired Navy Vice Admiral Arthur K. Cebrowski, generally regarded as the originator of the concept of Network-Centric Warfare, stated “Network-centric operations deliver to the U.S. military the same powerful dynamics as they produced in American business.”³ He further describes these dynamics at the strategic, operational and tactical levels:

- At the strategic level, the critical element for both is a detailed understanding of the appropriate competitive space--all elements of battlespace and battle time.
- Operationally, the close linkage among actors in business ecosystems is mirrored in the military by the linkages and interactions among units and the operating environment.
- Tactically, speed is critical.⁴

There are differing views amongst the visionaries attempting to shape the future U.S. military about the ideal force structure and employment. One key question is how the role of operational commanders leading forces at the operational level will transform. Some envision that “if Network Centric Warfare develops as it has been advertised, it seems clear that the operational level of war will be changed and probably reduced dramatically in importance.”⁵

In some respects, this idea is analogous to Amazon’s business model, in which all interactions are conducted virtually up to the “fulfillment” phase, when the product is acquired and delivered to the customer. Amazon’s online retailing reduces overhead and increases profits by eliminating brick-and-mortar stores and warehouses. Applying this model to the military, strategic leaders fight a virtual war. Located in high-technology war rooms in the United States, they conduct the “virtual transaction” by selecting a package of “desired effects” against an enemy. The “system” selects the perfect targets, then orchestrates

the “fulfillment” phase, where precision bombs and missiles rain down from the sky, causing massive “shock and awe”⁶, breaking the will of the enemy leadership and populace, and winning the conflict. Early versions of this scheme have not worked in the most recent conflicts in Kuwait, Bosnia-Herzegovina, Kosovo, Afghanistan and Iraq, and it is very unlikely that this scheme will ever prove viable.

Wal-Mart’s business model, combining physical and virtual transactions, is arguably a more realistic and valuable example for the military. Vice Admiral Cebrowski, discussing the future of the military and Network-Centric Warfare, even uses Wal-Mart as an example of successful Network-Centric operations that are applicable to a transformed U.S. military.⁷ While Wal-Mart leverages technology to minimize its cost of sale and maximize its profits, it still requires competent, skilled and knowledgeable store and regional managers to run operations, analogous to the military’s operational commanders.

It seems clear that operational commanders will continue to conduct warfare at the operational level, leading NCW-capable forces in accomplishing military objectives ranging from fighting wars to maintaining peace. *The key question is how an operational commander can effectively command his dispersed and decentralized forces while taking advantage of the potential offered by Network-Centric Warfare.* The operational commander’s formal statement of Commander’s Intent is the primary means by which he guides the effective warfighting of subordinate commands. According to Captain Michael Geron, U.S. Navy, “Network-Centric Warfare will succeed or fail depending on the concept of Commander’s Intent that evolves and is accepted.”⁸ *A revised and improved style of Commander’s Intent that capitalizes on new capabilities is essential to effective Network-Centric Warfare.*

Network-Centric Warfare Defined: Capabilities and Vulnerabilities

Admiral Jay Johnson, then Chief of Naval Operations, noted in 1997 that we were in “a fundamental shift from what we call platform-centric warfare to something we call network-centric warfare.”⁹ Alberts, Garstka and Stein define Network-Centric Warfare as:

An information superiority-enabled concept of operations that generates increased combat power by networking sensors, decision makers, and shooters to achieve shared awareness, increased speed of command, higher tempo of operations, greater lethality, increased survivability, and a degree of self-synchronization. In essence, NCW translates information superiority into combat power by effectively linking knowledgeable entities in battlespace.¹⁰

Vice Admiral Cebrowski summarized Network-Centric Warfare attributes as:

- Network-centric warfare allows our forces to develop speed of command.
- Network-centric warfare enables forces to organize from the bottom up--or to self-synchronize--to meet the commander's intent.¹¹

A pictorial representation of the primary NCW tenets, presented in figure 1, derived from a 2001 Department of Defense report to Congress, helps to visualize the cascading relationship of these NCW tenets in providing increased mission effectiveness.¹²

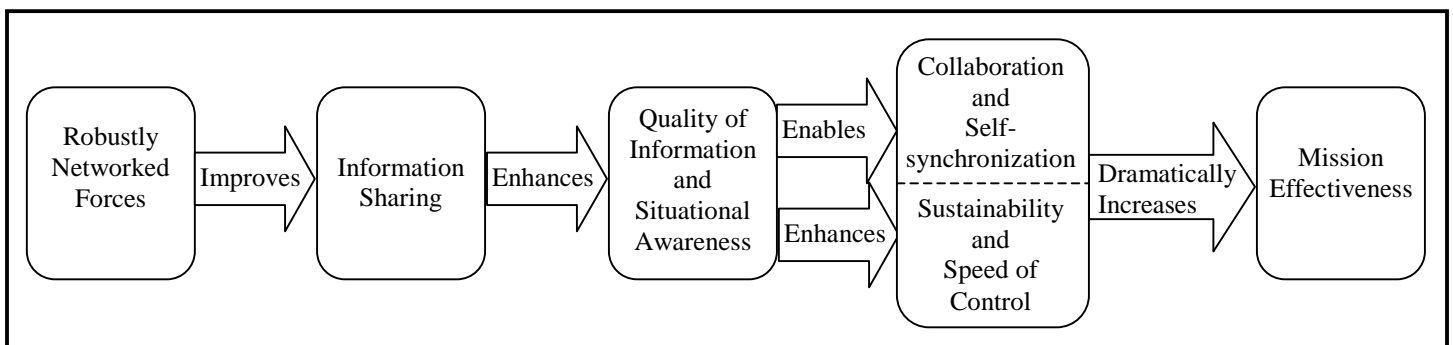


Figure 1.

In addition to discussing the capabilities that Network-Centric Warfare can provide, it is also important to discuss the vulnerabilities and limitations. The first critical vulnerability

occurs if the network is unable to provide required information and communications in a timely manner. “If the information is not available to the key commanders or units at a critical time, then the lighter, dispersed forces will be in danger of being overpowered by traditionally deployed heavier forces.”¹³

Another critical vulnerability of NCW, at the other end of the spectrum, is information overload. With the pervasive information network providing a shared awareness to all entities, it is likely that commanders and forces at various levels will be inundated and overwhelmed by the vast amounts of data and information provided. Dr. Thomas Barnett labels this as gluttony, one of the “seven deadly sins of NCW.” “I am concerned that the push for speed of command and self-synchronization will drive all participants to an over-reliance on the common operating picture as a shared reality that is neither shared nor real.”¹⁴

A final, and possibly most insidious, vulnerability of NCW is the opportunity it can provide to higher-level commanders to impose on the command prerogative of subordinate commanders. In the past, commanders often enjoyed relative autonomy, often due to isolation from their superior commanders for extended periods. NCW, through its pervasive connectivity, eliminates this isolation, permitting continuous micromanagement and over control by superior commanders, stifling innovation, flexibility and effectiveness of subordinate commanders.

While Network-Centric Warfare offers great promise, with impressive potential capabilities, there are significant vulnerabilities, which if not properly addressed, could turn

these advantages into liabilities. Incorporating NCW into joint doctrine, training, practices and methods is necessary to preclude these pitfalls. Building upon existing doctrine and concepts is the smart and efficient way to proceed.

The Commander's Role in a Networked Force

There are myriad views about the role of an operational commander in command of Network-Centric forces. At one end of the spectrum it is assumed that the operational (or possibly strategic) commander will have nearly perfect and instantaneous situational awareness of the complete battlespace, provided by a comprehensive blanket of networked sensors, weapons platforms, warfighters and C2 nodes, presented to him in a real-time Common Operation Picture (COP). With this omniscience, he will be able to make extremely rapid decisions, and then convey his explicit tasks or orders to subordinate commanders, or possibly even to individual warfighters, weapons platforms or sensors. Taking this idea to the next level, the commander would assimilate the packaged knowledge provided by the COP, then select specific targets and the desired effects. With a push of a button (or perhaps the wave of a virtual-reality glove), the commander would launch the perfect weapon package to neutralize all threats.¹⁵

At the other end of the spectrum, the operational (or possibly strategic) commander will initiate orders to execute a mission or an operation, then dispersed, decentralized, networked forces will autonomously coalesce into a common purpose, much as a hive of bees or a colony of ants. Instead of pheromones to convey the higher message, the NCW network will convey to each element its place in the whole in the form of shared awareness, and the

elements will self-synchronize in a bottom-up fashion, executing the mission without further direction or interaction of higher commanders.¹⁶

The true role of an operational commander leading NCW-enhanced forces is likely to be somewhere between these two extremes. In the super-centralized scenario, the operational commander is the nexus for all tactical and operational information and decision-making. Even if the NCW system could provide near-perfect situational awareness, which it cannot, the limiting factor would be the ability of this single human to assimilate this vast quantity of information and make sound, rapid decisions. Additionally, since he is executing the tactical battle, who then is planning the next operational phase? Who is leading his assigned operational forces? In the super-decentralized scenario, the operational commander is virtually a bystander. He and his staff probably conduct the initial planning and direction, then set the forces in motion with an execute order. The networked forces are then on their own: communicating, synchronizing and executing at their level to accomplish the assigned mission. This scenario presumes that each element will correctly glean from the shared-awareness COP their appropriate place in the whole and correctly execute their piece as the situation rapidly and dynamically changes.

The role of the operational commander is to command assigned forces, to prepare for any eventuality within his assigned area of operations, and when directed, to lead his forces in decisive action. In preparation for these eventualities, the commander and his staff conduct deliberate planning; developing plans that will guide the conduct of operations should a crisis develop. Each of these plans includes the commander's vision, mission statement and his

Commander's Intent for the particular operation. Captain Geron states that, regardless of the degree of centralization of the NCW-capable forces, it is this Commander's Intent that will guide and influence appropriate operational planning and execution.¹⁷ However, he does not specifically define the composition of this new form of Commander's Intent, how it will differ from existing Commander's Intent, nor how an NCW-enabled commander will use it. The remainder of this paper addresses these issues.

Traditional Commander's Intent

The concept of Commander's Intent is not new. It has been used in one form or another, with varying degrees of success, as long as commanders have been leading forces. However, relatively recently, the concept of Commander's Intent has been formalized, and is now a central part of military planning doctrine. In an article published soon after the release of the U.S. Army Field Manual FM 101-5 in 1997, Lieutenant Colonel Walter Anderson stated "the new FM revises substantively a concept we've been trying to get our arms around for years – commander's intent. Just when we believe we've come to grips with purpose, method, and end state, we're turned on our doctrinal ear by the May 1997 edition of FM 101-5."¹⁸ The concept of Commander's Intent continues to evolve. Joint Pub 0-2 provides a general (traditional) definition:

Commander's intent represents a unifying idea that allows decentralized execution within centralized, overarching guidance. It describes the commander's desired outcome, while allowing subordinates to exercise initiative in consonance with the commander's overall goals. During execution the situation may change, possibly making some assigned tasks obsolete, but the commander's intent is overarching and usually remains unchanged.¹⁹

Commander's Intent is the personal vision of the commander to his subordinates, expressing his will, direction and guidance to accomplish a particular military objective and achieve a desired end state. The commander builds his intent statement from his higher headquarter commander's mission statement and intent. He prepares his Commander's Intent for his subordinate commander two echelons below. This "nesting" of Commander's Intent occurs at each level of command. Commander's Intent is descriptive, not prescriptive in nature. It explains the purpose of the mission, possibly describes some of the methods recommended to accomplish the mission, and the desired end state. These three components: **purpose, method and end state**, are the elements of the Commander's Intent.²⁰

Network-Centric Commander's Intent

If the traditional style of Commander's Intent has proven so effective in guiding successful operations, evolving with the changes in warfare to become an accepted part of war-fighting doctrine, then why must it now be modified to enable successful Network-Centric Warfare, as Captain Geron proposes?²¹ And if it must be modified, how?

The answers lie in the new potential presented by Network-Centric Warfare. These new abilities *require* properly crafted Commander's Intent for maximum warfighting value, and at the same time, *enable* a new, improved style of Commander's Intent, which benefits from NCW features to guide the successful conduct of warfare. The mutually beneficial, synergistic interaction between the improved Commander's Intent and the capabilities provided by Network-Centric Warfare offer the possibility of dramatic improvement in our war-fighting capabilities.

The traditional style of Commander's Intent is relatively static, designed to remain relevant despite changes in the battlespace, providing top-down guidance to the subordinate commander throughout the current operation, possibly without updates of his situational awareness or interaction with his superior commander. It is necessarily non-specific, since it must guide operations for a possibly extended period with a wide range of possible operational developments. It is a snapshot of the situational awareness, guidance and objectives at the time of the execute order, hopefully robust enough to accommodate all contingencies.

Network-Centric Commander's Intent should be dynamic and more refined, retaining the basic format (purpose, method and end state), which has proven extremely effective. The focus of the Network-Centric Commander's Intent should shift from the traditional static style, to a more specific and timely variety, designed to guide the subordinate commanders more precisely, with frequent updates. Network-Centric Commander's Intent should still convey the general guidance provided by traditional Commander's Intent, in case the network connection is lost, allowing the subordinate commander to continue with the mission until the network is restored and updates are provided. Network-Centric Commander's Intent would still permit innovation and flexibility; however, through more frequent and precise updates, the requirement to innovate under unexpected and adverse conditions will be dramatically reduced, enabling more focused, powerful and effective warfighting. Captain Geron stated "A new Commander's Intent that propagates self-organization, self-synchronization and accelerated speed of command is the "nail" for genuine Network-

Centric transformation.²² A dynamic, refined, multi-level, Network-Centric Commander's Intent will accomplish this feat.

Coincidentally, Network-Centric Warfare purports to provide a pervasive, robust, high-speed, high-capacity information infrastructure (or infostructure, in the jargon of Alberts et al.),²³ seamlessly linking sensors, shooters and C2 nodes, as well as a shared, tailored situational awareness through the COP. This pervasive network will enable more frequent and focused interchange between the commander and his subordinates, as well as increased comprehension by all parties, due to the inevitable interaction through the real-time communications and shared frame of reference. Copies of the dialogue are easily archived for future reference, clarification and dissemination. Network-Centric Commander's Intent should be tailored to more precise and specific missions, based on the shared situational awareness and the speed of command enabled by the availability of more accurate and timely information. This dynamically updated Commander's Intent, combined with the shared COP, will enable subordinate commanders to increase their own speed of command, markedly reducing the time required to convey their Network-Centric Commander's Intent or specific tasking to their subordinates. Because lower level units share the higher level Network-Centric Commander's Intent, guiding mission execution, along with a shared COP and robust communications, they will be able to effectively self-synchronize at their level, to achieve the cooperatively accomplished end state.

Example of Evolving Commander's Intent

To illustrate the concept of properly formulated Network-Centric Commander's Intent that both enables and leverages Network-Centric Warfare, a comparison of Commander's Intent

from past, present and an NCW-enabled future, provided in Appendices A, B and C, respectively, is provided. For each example, the relationship between the guidance and direction provided by the Commander's Intent and the key attributes of Network-Centric Warfare are examined. Specifically, the following NCW attributes are analyzed:

- connectivity between the commander and subordinates,
- dispersion and decentralization of assigned forces,
- level of shared situational awareness (COP),
- ability for bottom-up self synchronization of forces,
- speed of command

The first example, in Appendix A, is Commander's Intent given to Major General William Sherman by Lieutenant General Ulysses S. Grant in 1864 as Sherman prepared to conduct his Southern campaign against the Confederacy in the American Civil War. The current "Purpose, Method and End State" format of Commander's Intent has been applied to General Grant's narrative Commander's Intent statement for illustrative purposes. Connectivity between General Grant and his subordinate, General Sherman was poor. It was expected that they would be out of communications for extended periods. The assigned forces were primarily kept intact as armies, with little intentional dispersion and decentralization. There was very little shared awareness, except when a courier or telegraph message arrived. Command and control was executed in a top-down, directed manner, with little ability or opportunity for bottom-up self-synchronization of forces. Speed of command still applied, but was measured in days and weeks instead of minutes and hours. For these reasons, the

Commander's Intent had to be very general, written to cover an entire campaign, possibly lasting months, without additional guidance, completely dependant on the capability of the commander, with little outside assistance expected.

The second example, in Appendix B, is a notional Commander's Intent used as an educational aid at the U.S. Naval War College in developing a Commander's Estimate of the Situation (CES). This example, written in 2002 for a scenario occurring in 2006, is from USCINCPAC to a Joint Task Force Commander responsible for conducting military operations in Borneo. The "Purpose, Method and End State" format has been applied to this narrative statement, as well. Although a pervasive network of sensors, shooters and C2 nodes is in its infancy, connectivity between echelons of command and between assigned forces is good, although not continual. Forces are more dispersed and decentralized; however, they must often operate autonomously due to sporadic communications. Shared awareness, in the form of a COP, is also in its infancy, and most forces do not have access. Bottom-up self synchronization is occasionally conducted, but usually effected through voice communications, such as Special Forces designating targets for strikes. Speed of command is greatly improved, especially in relation to enemy forces, but still limited by lack of pervasive communications and COP. The Commander's Intent is written to cover the entire campaign, although the duration is likely to be weeks instead of months, as in the first example. The Commander's Intent is more specific and detailed, but still general in scope.

The third example, in Appendix C, is an example of Network-Centric Commander's Intent, written in the "Purpose, Method and End State" format, from the perspective of a Combined

Task Force Commander to his subordinate commanders, preparing for a Coalition campaign against the military forces of Redistan who have invaded Whiteland in the year 2020. It is expected that a pervasive network, linking all forces, is in place. Connectivity is normally in real time between echelons of command and between forces at the same level. Friendly coalition forces are widely dispersed, but remain united in objective through shared awareness provided by the ubiquitous COP. Decentralized forces are able to self synchronize to accomplish the objectives provided through the Commander's Intent. Speed of command is enabled at all levels, due to the tailored shared awareness and precise Commander's Intent provided. The Commander's Intent is written to cover the entire campaign, describing the overall purpose, methods and desired end state, as well as shorter-term specific guidance for each section, designed to be frequently updated as the situation changes. The example includes specific, short-term Commander's Intent for the three days leading up to D Day, the commencement of operations. While the overall Commander's Intent will provide constant, general guidance throughout the campaign, the specific guidance will likely be updated sooner than the prescribed period. The specific Commander's Intent is designed to capitalize on the capabilities provided by NCW, maximizing the effects of real-time communications, dispersed forces, shared awareness and speed of command, while providing unity of command and effort, without stifling innovation and flexibility of subordinate commanders. The most current Commander's Intent would be included in the COP, available for all commanders to view, guiding the development of their "nested" Commander's Intent, and the actions of dispersed forces. Follow-on examples beyond D Day can easily be extrapolated from the example provided.

Risks and Vulnerabilities of Network-Centric Commander's Intent

Because Network-Centric Commander's Intent is designed to enable effective Network-Centric Warfare while relying upon NCW capabilities, it is prone to the same vulnerabilities as NCW, discussed earlier in this paper. The first vulnerability is the loss of the pervasive network. Dispersed forces lose part or all of their connectivity and COP, limiting their situational awareness, ability to self synchronize with other dispersed forces, and their ability to execute speed of command. While NCW equipment will certainly have redundancies and backup modes incorporated, it is still conceivable, and even likely, that at times dispersed forces will be isolated. A combination of proper training and appropriate direction, in the form of properly crafted Commander's Intent, as illustrated in Appendix C, will enable the isolated force to continue on its mission while "disconnected". While it is possible that the entire NCW network could collapse, it is unlikely beyond a short period, since robustness and fault tolerance are essential parameters of the network. In the worst case, our forces revert to their training and Commander's Intent to accomplish their mission in a fashion similar to today's war fighting.

The second vulnerability is the possibility of overwhelming commanders at any level with the vast amount of information provided. Preventing this will necessarily be a design parameter of the NCW network and COP. Commanders at each level have different requirements, and must have information packaged in a suitable manner. If properly constructed, the COP will do just that: provide each echelon of command and forces exactly the required level of detail without inundating them with unnecessary data. Properly crafted Commander's Intent will focus subordinate commanders upon their assigned objectives and

tasks, without overwhelming them with extraneous information. The properly designed COP will convey the Commander's Intent, as well as the appropriately filtered, shaped and packaged information required by each echelon of command to execute its mission.

The third and most insidious vulnerability is the tendency toward over control and micromanagement by commanders. The nature of the NCW network will certainly allow a higher-level commander to micromanage subordinate commanders, stifling initiative, flexibility and mission effectiveness, just as today's communications networks permit. The only viable solution is thorough screening and training of commanders to ensure they have the right aptitude, ability and disposition to lead NCW-enabled forces. While the autonomy enjoyed by commanders in the past is unlikely in Network-Centric Warfare, the opportunity for innovation, flexibility and creativity remain, enabling increased warfighting capability. Properly crafted Network-Centric Commander's Intent will enable these positive attributes while still guiding subordinate commanders to the assigned objective and end state.

Conclusion

The concept of Network-Centric Warfare offers tremendous promise for the transformation of the U.S. military to a streamlined, agile, networked, technologically superior fighting force, capable of meeting all challenges in the future, from full-scale war to peacekeeping operations. Just as businesses have embraced and capitalized on Network-Centric operations, so must our military as it navigates the Revolution in Military Affairs. However, NCW is not a panacea. Technology alone is not sufficient to transform our military. Warfighting doctrine, training and methods that capitalize on the new technology while avoiding pitfalls must develop simultaneously. Appropriate division of duties and responsibilities commensurate

with military objectives is critical. Operational commanders, leading forces at the operational level of war, will remain essential. The form of Commander's Intent provided by these operational commanders will determine the effectiveness of our NCW-enhanced fighting forces. Properly crafted Commander's Intent will capitalize on the capabilities offered by Network-Centric Warfare, enabling our U.S. forces to remain the most powerful in the world.

APPENDIX A

Commander's Intent 1864 Sherman's "March to the Sea"

On 4 April 1864, LTG Ulysses S. Grant wrote to MG William T. Sherman regarding his plan for conducting a spring campaign against the Confederacy. LTG Grant conveyed his intent to "take the initiative in the spring campaign, to work all parts of the army together, and somewhat toward a common center." LTG Grant informed MG Sherman of what his fellow commanders would be doing to accomplish that intent. Then he told MG Sherman to "move against Johnston's army, to break it up and to get into the interior of the enemy's country as far as you can, inflicting all the damage you can against their war resources. I do not propose to lay down for you a plan of campaign, but simply lay down the work it is desirable to have done and leave you free to execute it in your own way. Submit to me, however, as early as you can, your plan of operations."

LTG Grant understood that by asking MG Sherman to penetrate deep into enemy territory he would occasionally lose communications with his subordinate. Yet, he trusted that MG Sherman understood what he was to do, adding, "I believe you will accomplish it." The operation that resulted from this intent was MG Sherman's "march to the sea." The operation forced the Confederacy to divert resources from the forces opposing the Union main effort by the Army of the Potomac and hastened the end of the war.²⁴

Purpose: Conduct a spring campaign against the Confederacy to "take the initiative in the spring campaign."

Method: Move against Johnston's army; get into the interior of the enemy's country as far as you can. I do not propose to lay down for you a plan of campaign, but simply lay down the work it is desirable to have done and leave you free to execute it in your own way.

End State: Break up Johnston's army; inflict all the damage you can against their [Confederate] war resources.

APPENDIX B

Commander's Intent 2002 Borneo Case Study for Expeditionary Warfare

USCINCPAC intends for this operation to establish military conditions that will deter further aggression and isolate Kalimantan as the aggressor. These actions will preserve the territorial integrity of Brunei and facilitate Malaysian-led offensive efforts to restore its sovereign territory without provoking military intervention from the PRC or violating Indonesian territory. Time is critical. Kalimantan must quickly see a credible coalition force in the JOA that will deter its continued offensive. Establishing and maintaining control of key ports and facilities is essential. If application of military force is required, quickly seize and maintain the initiative through decisive operations. COAs will fully integrate multinational forces and minimize civilian casualties, infrastructure and environmental damage. The desired military end state is restoration of East Malaysia's sovereign territory and the elimination of Kalimantan's ability to threaten its neighbors through use of military force.²⁵

Purpose: Establish military conditions that will deter further aggression and isolate Kalimantan as the aggressor. These actions will preserve the territorial integrity of Brunei and facilitate Malaysian-led offensive efforts to restore its sovereign territory without provoking military intervention from the PRC or violating Indonesian territory. Time is critical.

Method: Kalimantan must quickly see a credible coalition force in the JOA that will deter its continued offensive. Establishing and maintaining control of key ports and facilities is essential. If application of military force is required, quickly seize and maintain the initiative through decisive operations. COAs will fully integrate multinational forces and minimize civilian casualties, infrastructure and environmental damage.

End State: Restoration of East Malaysia's sovereign territory and the elimination of Kalimantan's ability to threaten its neighbors through use of military force.

APPENDIX C

Network-Centric Commander's Intent 2020 CJTF Decisive Freedom D-3 Day

Purpose:

Overall: Our Coalition intends to decisively defeat the invading forces of Redistan and to restore the sovereign territory of Whiteland without provoking Greyonia into military action, minimizing civilian casualties and damage to Whiteland infrastructure.

Specific (D-3 to D Day): Redistan mechanized armed forces have invaded and overrun all of Whiteland except for the southwestern quarter of the country. To counter this invasion, we will assemble forces from all coalition members at Forward Sea Bases Alfa, Bravo and Charlie, located in the Blue Sea, by D-1 Day, in preparation for decisive actions in Whiteland commencing on D Day, to defeat, capture and remove Redistan forces. We will maintain established sea dominance in the Blue Sea, preventing Redistan naval forces from executing sea denial of Whiteland ports and littoral areas. We will maintain established air supremacy over the Combined Amphibious Operations Area (CAOA) in the Blue Sea, and will establish air supremacy over Redistan by D-1 Day, destroying any Redistan air forces or air defenses that engage coalition assets, maintaining a no-fly zone over the Blue Sea, Whiteland and Redistan throughout the operation. We will commence massive effects against Redistan forces in Whiteland and at critical command and control nodes in Redistan immediately, and continue throughout the campaign.

Method:

Overall: Employ joint and coalition forces in a synchronized assault on invading Redistan forces in Whiteland. Establish naval and air superiority. Coordinate massed-effects strikes for maximum effect to destroy and disrupt Redistan forces and C2. Employ Civil Affairs units to assist in post-hostilities transition. Maximize situational awareness, speed of command and effects, synchronization and force protection through continuous interaction on the Net.

Specific (D-3 to D Day): Method of inserting and employing coalition forces is at your discretion. Commence insertion and employment of main coalition forces into Redistan on D Day. Recommend concentrating on synchronized non-linear employment for maximum effect. Method of establishing naval and air superiority at your discretion. Massed effects against Redistan will include combined precision aerial, SOF and IW strikes.

End State:

Overall: Redistan military forces neutralized - no war-fighting capability remaining. All Redistan forces removed from Whiteland – sovereign territory restored. Greyonia forces remain in their country and are not involved in the conflict. Whiteland restoration underway with assistance of combined forces.

Specific (D-3 to D Day): Coalition forces deployed to Forward Sea Bases Alfa, Bravo and Charlie, prepared to conduct decisive actions in Whiteland commencing on D Day. Redistan forces and C2 significantly degraded through massed-effects strikes. Naval and air superiority established. Forces networked to maximize situational awareness, speed of command and effects, synchronization and force

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Endnotes

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- ² Arthur K. Cebrowski and John J. Garstka, "Network-Centric Warfare: Its Origin and Future," U.S. Naval Institute Proceedings (January 1998): 28-35.
- ³ Ibid., 30.
- ⁴ Ibid.
- ⁵ Erik J. Dahl, "Network Centric Warfare and the Death of Operational Art," (Unpublished monograph, U.S. Naval War College, Newport, RI: September 2001), 12.
- ⁶ Harlan K. Ullman and James P. Wade, Shock and Awe: Achieving Rapid Dominance (Washington, DC: National Defense University Press December 1996). The authors define the concept of "shock and awe" in establishing rapid military dominance to win wars and operations other than war.
- ⁷ Cebrowski and Garstka, Network-Centric Warfare: Its Origin and Future, 29.
- ⁸ Michael C. Geron, "Commander's Intent: the Critical Transformation Challenge for Networked Forces," (Unpublished monograph, U.S. Naval War College, Newport, RI: 2002), 4.
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- ¹⁰ David S. Alberts, John J. Garstka, and Frederick P. Stein, Network Centric Warfare: Developing and Leveraging Information Superiority, 2nd ed. (Washington, DC: DoD C4ISR Cooperative Research Program February 2000), 2. Considered the seminal book on Network-Centric Warfare.
- ¹¹ Cebrowski and Garstka, Network-Centric Warfare: Its Origin and Future, 31.
- ¹² Department of Defense, Office of the Secretary of Defense, Network Centric Warfare: Department of Defense Report to Congress, (Washington, DC: July 27, 2001), i.
- ¹³ Booz-Allen & Hamilton Inc., Measuring the Effects of Network-Centric Warfare, Vol. I, (Washington, DC: April 28, 1999), 2.
- ¹⁴ Thomas P.M. Barnett, "The Seven Deadly Sins of Network-Centric Warfare," U.S. Naval Institute Proceedings (January 1999): 36-39.
- ¹⁵ Admiral William Owens, "System of Systems", Armed Forces Journal (January 1996): 47. This example is an extension of the original ideas proposed by Admiral Owens, describing Dominant Battlefield Awareness (DBA), which would connect a large system of sensors and shooters together via information and command-and-control systems, permitting the detection, tracking, and classification of nearly all of the militarily relevant objects moving through the battlespace.
- ¹⁶ Cebrowski and Garstka, Network-Centric Warfare: Its Origin and Future; Alberts, Garstka and Stein, Network Centric Warfare: Developing and Leveraging Information Superiority. This example is an extension of the ideas proposed by Vice Admiral Cebrowski and Alberts, et al.
- ¹⁷ Geron.

¹⁸ Walter N. Anderson, "Commander's Intent: Theory and Practice." Armor Magazine (May/June 1998): 46-48.

¹⁹ Joint Chiefs of Staff, Unified Action Armed Forces (UNAAF), Joint Pub 0-2 (Washington, DC: 10 July 2001), III-15.

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²¹ Geron, 4.

²² Geron, 15. Referring to the statement "for want of a nail: the kingdom was lost..."

²³ Alberts, Garstka and Stein, 6.

²⁴ Headquarters, Department of the Army, Operations, Field Manual 3-0 (Washington, DC: 14 June 2001) 5-14.

²⁵ Naval War College textbook NWC 2095B, Joint Military Operations Department, U.S. Naval War College (Newport, RI, 2002), 16.